1.) A multi-layer filter media comprising a combination of at least two successive adjacent face-to-face thicknesss of carded, chopped fibers, said carded, chopped fiber sizes of each thickness having a combination of fiber sizes so that the pore size characteristics of one thickness differs from that of an adjacent thickness with said fibers of one thickness being comparatively finer than said fibers of said other thickness and with the fiber sizes and pore sizes of said successive adjacent face-to-face thicknesses of carded, chopped fibers being calculated so that the overall average pore size of the combined successive thicknesses is smaller than the pore size of the combination of finest fiber thickness, so as to optimize filtration performance efficiency.

2.) The filter media of Claim 1, said carded, chopped fibers of each thickness being substantially opened and aligned.

3.) The filter media of Claim 1, wherein the fiber size characteristic of one thickness is less than six (6) denier and the other is at least six (6) denier.

4.) The filter media of Claim 1, wherein there are at least three (3) different denier fibers with the denier characteristics of each being approximately one to four (1-4), six (6) and at least twenty (20) respectively.

5.) The filter media of Claim 1, said combined thicknesses of filter media being integral.

6.) The filter media of Claim 1, said thicknesses being of separate face-to-face thicknesses.

7.) The filter media of Claim 6, said face-to-face layers of filter media including layer bonding means between said faces.

8.) The filter media of Claim 7, said carded, chopped fibers having low melt characteristics with said layer bonding means comprising a thermal binding.

9.) The filter media of Claim 7, said layer bonding means comprising a chemical binding agent.

10.) The filter media of Claim 9, said chemical binding agent being a selected acrylic binders.

11.) The filter media arrangement of Claim 1, wherein said successive thicknesses extend horizontally, with the upstream thickness of said combined successive thicknesses being of higher porosity and higher denier characteristics than a downstream thickness.

12.) The filter media of Claim 1, wherein the average pore size of said "n" layered filter media is expressed by the formula:

$$\frac{1}{M} = \varepsilon_i \varepsilon_{i+1} .. \varepsilon_n (\sum_{i=1}^{n} \frac{1}{M_i})$$

wherein the porosity "ε" is the ratio of the pore volume to the total volume of medium, "$\sum$" is the summation from i = 1 to n, and "M" is the mean flow pore diameter of the filter media layers

13.) The filter media of Claim 1, wherein the air frazier permeability of an "n" layered media is expressed by the formula:

$$\frac{1}{V} = \varepsilon_i \varepsilon_{i+1} .. \varepsilon_n (\sum_{i=1}^{n} \frac{1}{V_i})$$

wherein "v" is air frazier, fluid velocity, in cfm/square foot, the porosity, "ε" is the ratio of the pore volume to the total volume of medium; and, "Σ" is the summation from i = 1 to n.

14.) The filter media of Claim 1, wherein said thicknesses comprise a coarse thickness and an intermediate thickness of fibers all of approximately one to two (1 – 2) inches in length with the coarse thickness advantageously approximately comprised of thirty (30) percent fifteen (15) denier fibers, thirty (30) percent six (6) denier fibers and forty (40) percent six (6) denier low melt fibers and the intermediate thickness advantageously comprised approximately of forty (40) percent six (6) denier fibers ten (10) percent three (3) denier fibers and fifty (50) per cent four denier (4) low melt fibers.

15.) The filter media of Claim 1, wherein said layers comprise a coarse thicknesse and a fine thickness of fibers all of approximately one half to two (1/2 –2) inches in length with the coarse thickness advantageously comprised approximately of thirty (30) percent fifteen (15) denier fibers, thirty (30) percent six (6) denier fibers and forty (40) percent six (6) denier low melt fibers and the fine thickness advantageously comprised approximately of forty (40) percent three (3) denier fibers, ten (10) percent one (1) denier fibers and fifty (50) percent two (2) denier low melt fibers.

16.) The filter media of Claim 1, wherein said thicknesses comprise a coarse thickness, an intermediate thickness and a fine thickness all of approximately one half to two (1/2 – 2) inches in length with the coarse thickness advantageously approximately comprised thirty (30) percent fifteen (15) denier fibers, thirty (30) percent six (6) denier fibers and forty (40) percent six (6) denier low melt fibers; the intermediate thickness advantageously comprised

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approximately of forty (40) percent six (6) denier fibers, ten (10) percent three (3) denier fibers and fifty (50) percent four (4) denier low melt fibers; and, the fine thickness advantageously comprised approximately of forty (40) percent three (3) denier fibers, ten (10) percent one (1) denier fibers and fifty (50) percent two (2) denier low melt fibers.

17.) The filter media of Claim 1, wherein said thicknesses comprise an intermediate thickness and a fine thickness of fibers all of approximately one half to two (1/2 – 2) inches in length with the intermediate thickness advantageously comprised of approximately of forty (40) percent six (6) denier fibers, ten (10) percent three (3) denier fibers and fifty (50) percent four (4) denier low melt fibers; and, the fine thickness advantageously comprised approximately of forty (40) percent three (3) denier fibers, ten (10) percent one (1) denier fibers and fifty (50) percent (4) denier low melt fibers.

18.) A multi-thickness filter media comprising at least three different fiber sizes in successive horizontally extending adjacent face-to-face independent thicknesses of carded, chopped fibers, said carded, chopped fibers of each independent thickness having a combination of fibers and pore size characteristics with the carded, chopped fibers of each independent thickness being substantially opened and aligned, the fiber size characteristics from downstream toward upstream thicknesses being approximately one to four (1-4), six (6) and at least twenty (20) deniers from downstream finer denier thickness toward said upstream coarser thicknesses, with pore sizes decreasing from the finer downstream lower denier thickness toward the coarser upstream higher denier thickness; said adjacent face-to-face thicknesses being bonded by a selected acrylic binder, the carded fibers in said thicknesses being calculated so that the overall average pore size of the combined adjacent successive thicknesses is smaller than the pore size of said independent finest fiber thickness by the formulas expressed:

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$$\frac{1}{M} = \varepsilon_i \varepsilon_{i+1} ... \varepsilon_n \left(\sum_{i=1}^{n} \frac{1}{M_i} \right)$$

wherein the porosity "ε" is the ratio of the pore volume to the total volume of medium, "Σ" is the

summation from "i" = 1 to n, and "M" is the mean flow pore diameter of the filter media

thicknesses and with the air frazier permeability of said three thicknesses filter medium being

expressed by the formula:

$$\frac{1}{v} = \varepsilon_i \varepsilon_{i+1} ... \varepsilon_n \left(\sum_{i=1}^{n} \frac{1}{v_i} \right)$$

wherein "v" is air frazier, fluid velocity, in cfm/square foot, the porosity, "ε" is the ratio of the

pore volume to the total volume of medium; and, "Σ" is the summation from "i" = 1 to n.

19.)   A method of manufacturing filter media comprising: collecting a first independent

measured thickness weight of chopped fibers in a mixer-blender zone, said first independent

measured thickness weight of chopped fibers being of selected denier and pore size; collecting at

least a second independent measured thickness weight of chopped fibers in a mixer-blender zone

to be successively joined in overlying face-to-face thicknesses relation with said first measured

thickness weight of chopped fibers, said second measured thickness weight of chopped fibers

being of selected denier and pore size different from said denier and pore sizes of said first

measured thickness weight of chopped fibers with said fibers of one independent thickness being

finer than said fibers of said other independent thicknesses; passing said first and second

measured thickness weights to a carding zone to open and align said chopped fibers in each said

successively joined filter media thicknesses having face-to-face relationship to maximize

particulate dirt holding capacity and to increase efficiency with the thicknesses being calculated so that the overall average pore size of the combined successive face-to-face thicknesses is smaller than the pore size of the independent finest filter thicknesses.

20.)   The method of manufacturing filter media of 19, wherein said face-to-face filter media thicknesses are selected in said mixer-blender zone to have a decreasing denier and decreasing pore size when positioned in an upstream to downstream line of flow during filtering operation.

21.)   The method of manufacturing filter media of Claim 19, wherein said face-to-face filter media thicknesses are each carded separately in said carding zone in successive steps and positioned in overlying face-to-face bonded relationship.

22.)   The method of manufacturing filter media of Claim 19, said filter media thicknesses being bonded to each other by a selected bonding spray.

23.)   The method of manufacturing filter media of Claim 17, wherein at least one of said filter media thicknesses is of low melt fibers, said filter media thicknesses being bonded to each other by heating.

24.)   The method of manufacturing filter media of Claim 23 said low melt fiber melting being in the approximate range of two hundred to four hundred (200-400) degrees Fahrenheit.

25.)   The method of manufacturing filter media of Claim 15, wherein said calculation of face filter media thicknesses is expressed by the formulas:

$$\frac{1}{M} = \varepsilon_i \varepsilon_{i+1} .. \varepsilon_n (\sum_{i=1}^{n} \frac{1}{M_i})$$

and

$$\frac{1}{v} = \varepsilon_i \varepsilon_{i+1} .. \varepsilon_n (\sum_{i=1}^{n} \frac{1}{v_i})$$

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with the porosity "ε" is the ratio of the pore volume to the total volume of medium, "Σ" is the

summation from "i" = 1 to n, and "M" is the mean flow pore diameter of the filter media layers

and "v" is fluid velocity in cubic feet per minute over square feet (cfm/sq. ft.).

26.) The method of manufacturing filter media of Claim 19, wherein said calculations

include an air frazier permeability calculation expressed by the formula:

$$\frac{1}{v} = \varepsilon_i \varepsilon_{i+1} .. \varepsilon_n (\sum_{i=1}^{n} \frac{1}{v_i})$$

wherein "v" is fluid velocity in cubic feet per minute over square feet (cfm/sq. ft.), the porosity

"ε" is the ratio of the pore volume to the total volume of medium, "Σ" is the summation from "i"

= 1 to n.

27.) A method of manufacturing multi-layerd filter media comprising: collecting in a

mixer-blender zone at least a first and second layer of chopped fibers in separate independent

thickness layers, each layer of filter media being of measured weight with at least one layer

being of low melt fibers with said fibers of one independent layer being finer than said fibers of

said other independent layer fibers; passing each layer through a carding zone including separate

successive carding zone sections for each to open and align the fibers of each layer and to

position the first and second layers in adjacent face-to-face relation; passing said adjacent face-

to-face layers to a heating zone of sufficient heat to melt bind said layers in fast relation, said

carded fibers in said bonded layers being calculated so that the overall average pore size of the

combined adjacent successive layers is smaller than the pore size of said independent finest fiber

thickness layer calculated by formulas expressed:

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$$\frac{1}{M} = \varepsilon_i \varepsilon_{i+1} .. \varepsilon_n \left(\sum_{i=1}^{n} \frac{1}{M_i} \right)$$

and

$$\frac{1}{v} = \varepsilon_i \varepsilon_{i+1} .. \varepsilon_n \left(\sum_{i=1}^{n} \frac{1}{v_i} \right)$$

with the porosity "ε" is the ratio of the pore volume to the total volume of medium, "$\sum$" is the summation from "i" = 1 to n, and "M" is the mean flow pore diameter of the filter media layers and "v" is fluid velocity in cubic feet per minute over square feet (cfm/sq. ft.).